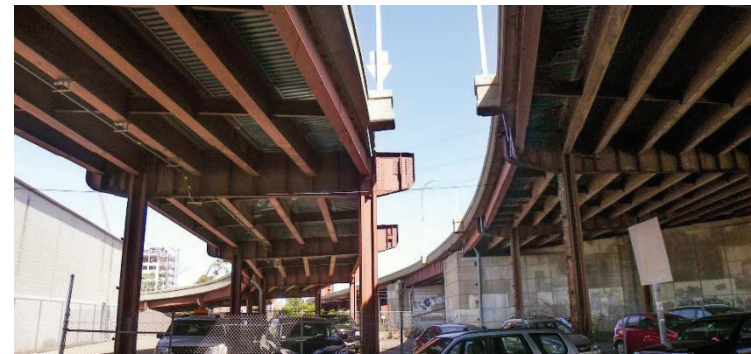


**Viaduct Bridge Repairs and Related Work (including Painting)
Brg. No.'s C-09-007 & C-09-011 Route 1 over various streets and MBTA
Chelsea | Project File No. 605287**



**MassDOT Board of Directors
Oct. 15, 2018**

Overview

- The rehabilitation of the Chelsea Viaduct is a critical step towards meeting MassDOT's bridge condition goals and improving safety.
 - When completed, will reduce our Deck Area rates as "poor" by 267,000 S.F., which is 35% of the amount needed to achieve MassDOT's condition goal.
- This project has been sequenced to minimize traffic impacts and to dovetail with construction on the Tobin Bridge.
 - Avoids the need to further impact the Chelsea community at a later date
- Travel impacts from construction are minimal and will not be felt until 2020
 - The Highway Division is working with the MBTA and impacted stakeholders now to further diminish impacts and establish communications protocols for the life of the project

Background

- Carries US Route 1 over Chelsea through the “Chelsea Curves” from the County Road Overpass to the Tobin Bridge.
- Constructed 1956 and 1957
- Southern Viaduct – 2,000 feet long
- Northern Viaduct – 1,000 feet long
- 75 spans
- Carries 63,000 vehicles per day

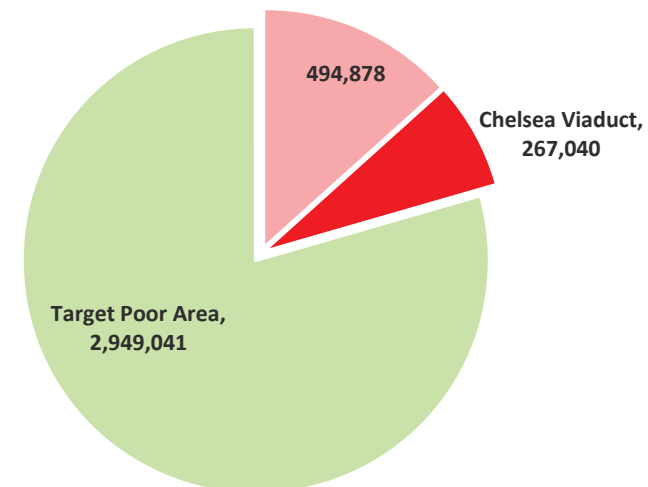
Project Benefits

- Current on-going maintenance activities (performed at night) will no longer be required.
- Improved under deck lighting will provide increased security.
- Construction of a solid snow fence on portions of the viaduct.
- Comprehensive mitigation plan developed with the City includes re-paving existing parking lots under the viaduct and constructing a new parking lot.

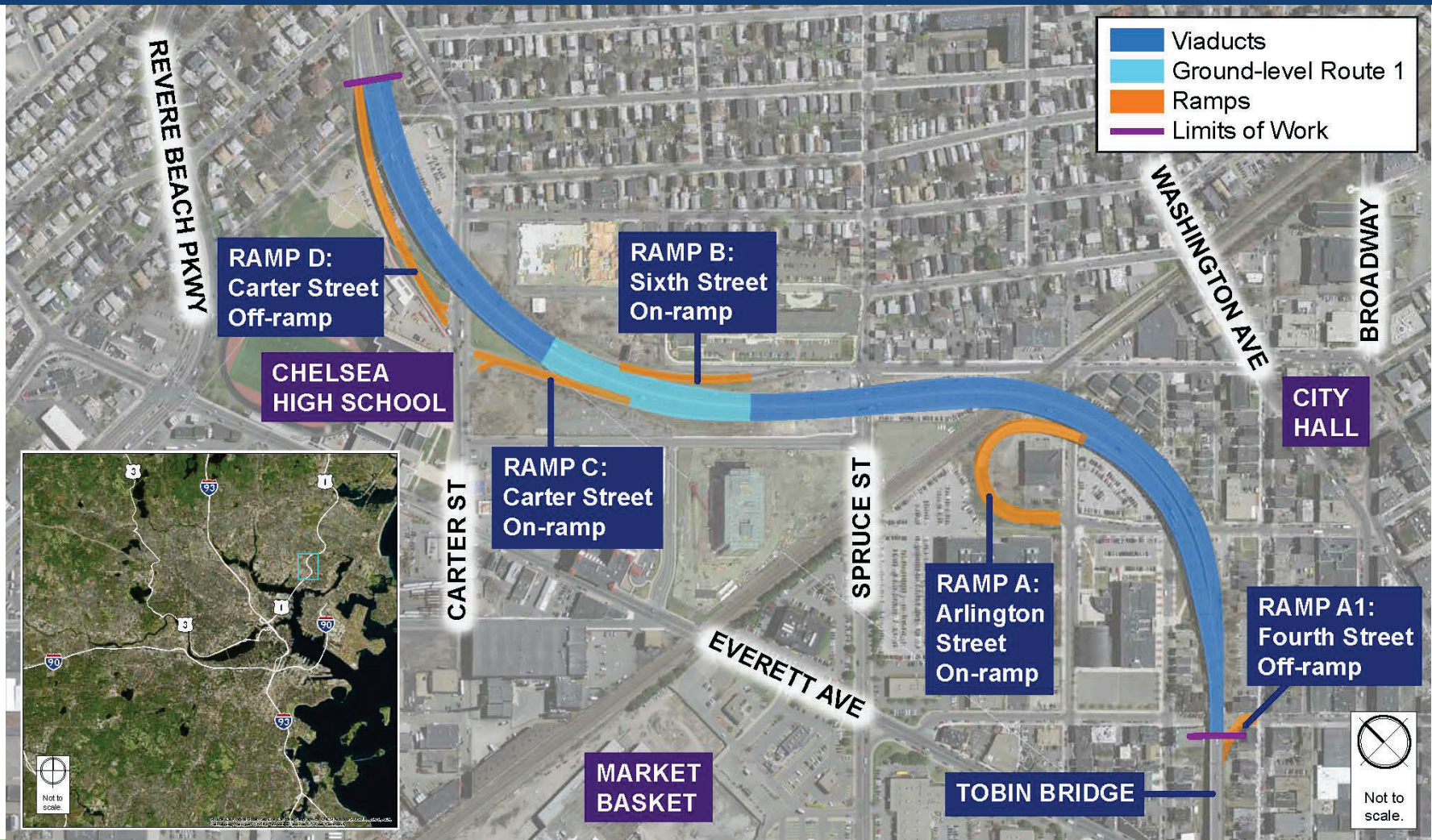
Project Benefits

- MassDOT's long term target is to limit the amount of NHS Bridges in poor condition to 10% of the inventory (in terms of bridge area)
- Chart at right depicts the current area (SF) of poor NHS bridges, which is a total of approx. 3.71 million SF of the 29.49 million SF NHS Inventory, or 12.58 %.
- The poor area is located on 205 bridges across the state
- The desired long term target (10%) is in green, and the contribution from Chelsea viaduct toward achieving this target is shown proportionally in dark red

Effectiveness of Chelsea Viaduct Project Toward Achieving NHS Bridge Condition Goals



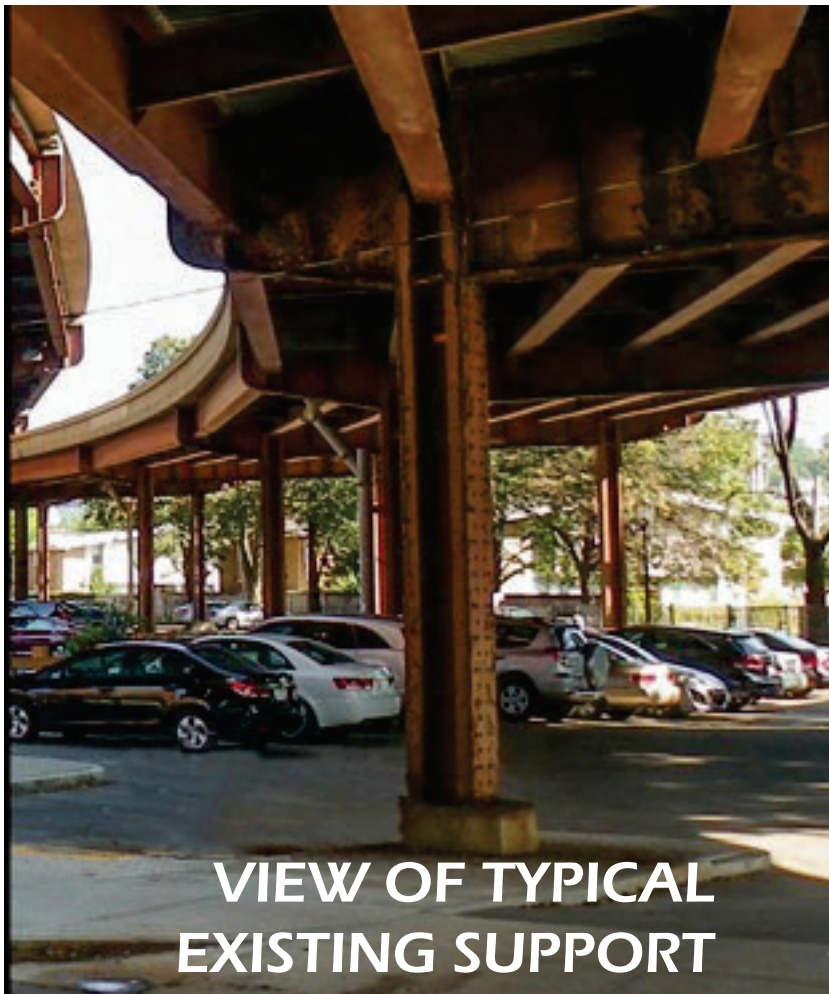
Project Limits of Work



Scope of Work

- Repair and Retrofit Substructure
- Pre-Fabricated Bridge Units (PBUs) throughout majority of project
- Conventional repair methods at 6 isolated spans
- Provide new crash tested bridge barriers
- Provide new solid snow fence where safe
- Replace Roadway Lighting and Bridge Drainage
- Rebuild existing parking lots under viaduct, and add new Carter Street lot
- Includes paving work on Tobin Bridge (SB) originally included in on-going Tobin Deck Rehab contract

Scope – Substructure



**VIEW OF TYPICAL
EXISTING SUPPORT**



**VIEW OF PROPOSED
SUPPORT**

Chelsea Viaduct Rehabilitation Project



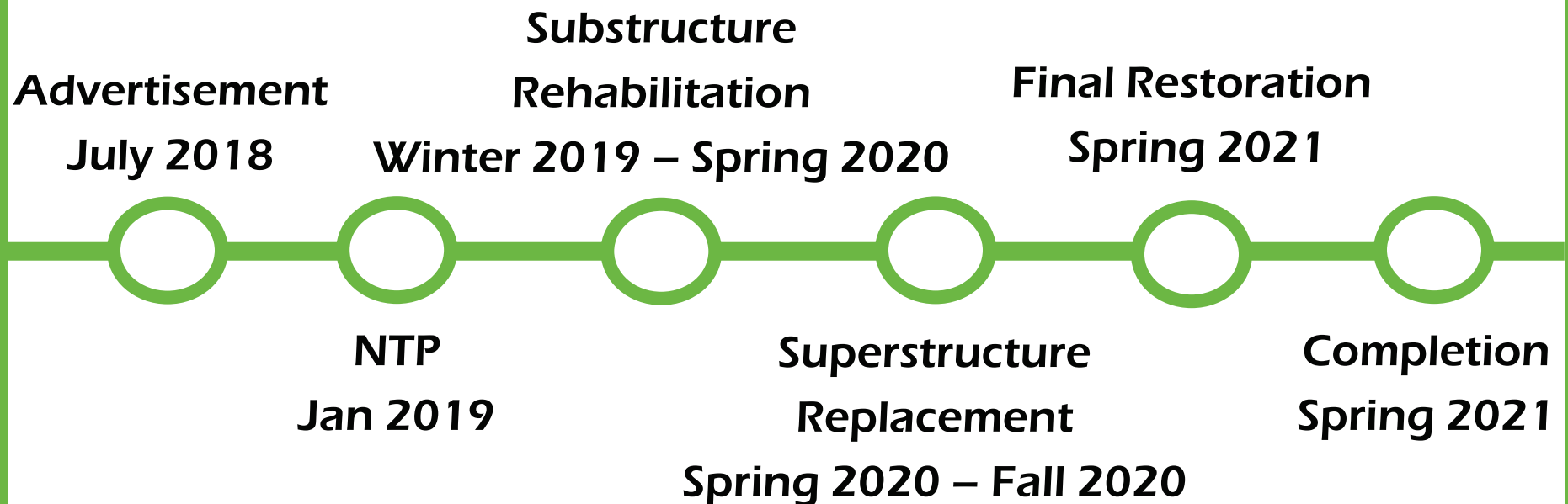
Scope – Superstructure
PREFABRICATED BRIDGE UNITS (PBUs)

Scope - Superstructure

- Isolated Spans will require conventional repair:
 - Rte 1 SB over Rte 1 NB (at Southern limits of work near 4th Street)
 - Span over Railroad
 - Work includes the removal of the existing deck, cleaning, strengthening and painting of the existing steel, and utilizing steel grid deck elements.



Construction Schedule



Project schedule has been coordinated with Tobin Deck Rehabilitation and other regional projects

Weekday Construction

- Winter 2019 - Spring 2020: Substructure rehabilitation
- No traffic impacts on Route 1 during peak travel times. Any work performed during this period will occur between 10 PM and 5 AM
- Spring to Fall 2020: NB/SB superstructure replacement
 - SB reduced from 3 lanes to 2 lanes
 - NB – Tobin work zone of 2 lanes to be extended within project limits
 - NB/SB reduced to 1 lane overnight for ABC construction
 - Interim ramp closures with local detours
 - Interim parking impacts
- Weekend lane reductions on Route 1 (12 weekends) for conventional construction
- Extensive public outreach to ensure motorists and residents understand traffic impacts

Weekend Construction

- Route 1 will be reduced to 1 lane NB/SB for 12 weekends in 2020
- Lane reductions Friday 10pm through Monday 5am
- Extensive public outreach to ensure motorists and residents are aware of weekend work.



Work schedule & I/D

- Incentive / Disincentive provisions for Milestone 3 (Full Beneficial Use) and Milestone 4 (Grid Deck Replacement)
- Roadway User Costs (with no limits) will be assessed if traffic lanes not restored on the mainline by 5 AM every morning
- Roadway User Costs (with no limits) will be assessed if Ramp D traffic is not restored by the end of weekend shutdown

Construction Mitigation

- Noise monitoring and mitigation (especially near Kayem Park and Vietnam Veterans Memorial Pool)
- Pre and post construction monitoring of specified properties
- Dust and pollutant containment
- Lead Paint Containment & Regular Air Monitoring
- Mitigation of temporary loss of parking
- Contractor cannot utilize public parking
- Frequent coordination with New England Produce Center and Chelsea Chamber of Commerce
- 24-hour hotline in English and Spanish
- Extensive public outreach

Public Outreach

- Public Information Meeting- 11/8/17
- Project Open House – 12/5/17
- Chelsea Collaborative – 12/7/17
- GreenRoots Chelsea – 12/14/17
- Chelsea City Manager – 1/12/18
- GreenRoots Chelsea Follow-up – 1/18/18
- All-Spanish Public Information Meeting – 1/22/18
- 25% Design Public Hearing – 1/24/18
- Door-to-door abutter project notification – 1/16/18-1/21/18
- Chelsea Chamber of Commerce – 2/14/18

Public Outreach

- GreenRoots Chelsea Leadership – 2/22/18
- Chelsea City Council (Special Session) – 3/1/18
- Targeted Business Owners – 3/19/18
- Public Update Meeting – 4/5/18
- New England Produce – 5/9/18
- Chelsea Chamber of Commerce – 5/17/18
- Neighborhood Pop-up Meetings – November, December and January 2018
- Chelsea City Manager Follow-up – 5 Formal Meetings
- General, Businesses, and Non-Occupant Owners Notification Letters and Emails – November, December, and pre-Design Public Hearing

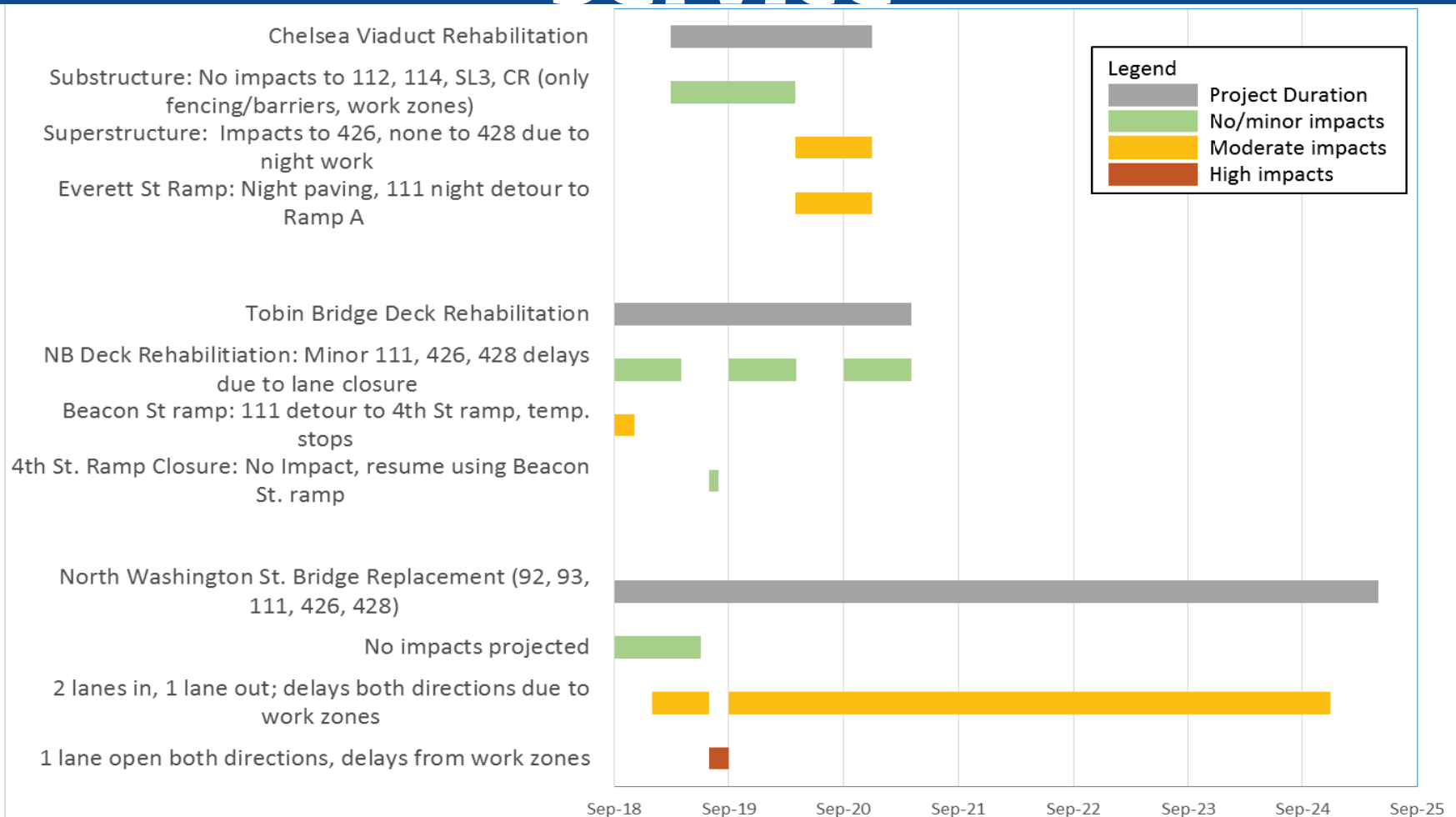
Project Costs

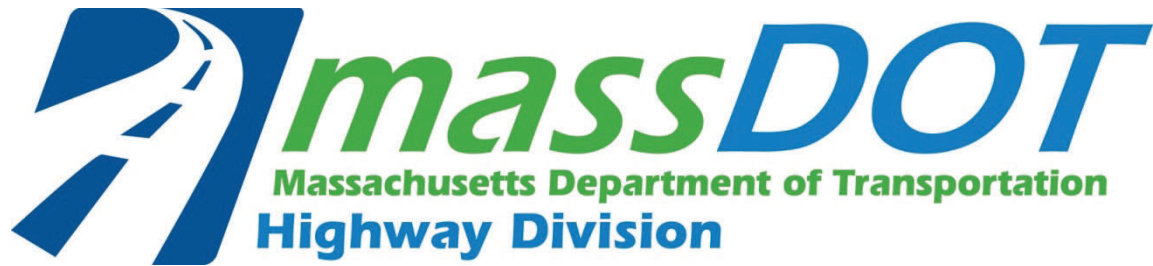
2018 - 2022 CIP	\$221,884,493.80
Office Estimate (advertised)	\$174,731,985.10
Low Bid	\$169,371,930.00
Contingencies (10%)	\$16,937,193.00
Constr. Engr.'g. (5%)	\$8,468,596.50
Traffic Police	\$850,000.00
Trainees	\$10,000.00
Telephone	\$15,000.00
I/D	\$4,328,000.00
RR Flaggers	\$250,000.00
RR Insurance	\$10,000.00
Materials (zipper barrier)	\$3,280,000.00
NFA Police OT	\$364,500.00
TOTAL CONSTRUCTION COST	\$203,885,219.50

Bid Estimate Comparison

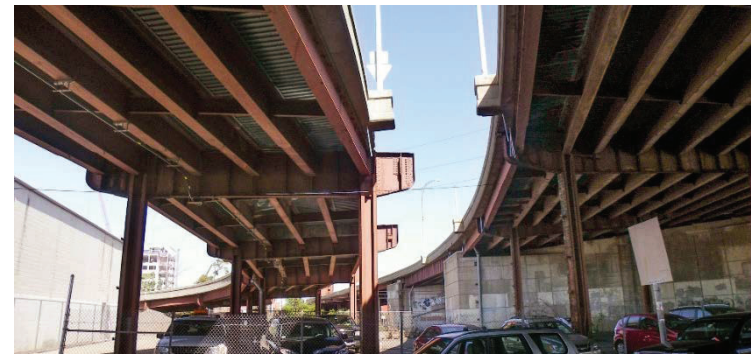
Contractor/JV	Bid Amount	Difference from Office Estimate
Office Estimate	\$174,731,985.10	
Skanska McCourt II JV	\$169,371,930.00	-3.1%
Barletta - O&G Chelsea Viaduct JV	\$184,719,350.00	5.7%
Walsh Construction Company II LLC	\$189,063,669.50	8.2%
SPS-Judlau-DW White JV	\$189,745,706.15	8.6%
The Middlesex Corp.	\$189,888,524.00	8.7%
White - Kiewit III JV	\$219,777,000.00	25.8%
Average Bid	\$190,427,696.61	9.0%

Anticipated Impact to MBTA Service





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